

CLAIMS

We claim:

1. A storage system, comprising:
one or more data storage logical units (LUs)
5 comprising respective physical media, the one or more LUs
being adapted to receive commands and responsively to the
commands to store and recall data; and
a plurality of ports, each port being adapted to
maintain a respective LU command queue for each of the
10 LUs, such that upon receiving a command directed to one
of the LUs, the port places the received command in the
respective LU command queue, converts the received
command to one or more converted commands at least some
of which are directed to the physical media of the one of
15 the LUs, and conveys the at least some converted commands
to the physical media in an order determined by the
respective LU command queue.
2. The storage system according to claim 1, wherein the
command is comprised in one of a plurality of strings of
20 commands each directed to a respective one of the ports,
and wherein each of the ports is coupled to receive the
respective string of commands directed thereto.
3. The storage system according to claim 1, wherein the
plurality of ports comprises a first port and a second
25 port, and wherein the first port conveys a first string
of the at least some converted commands in a first order
to the physical media, and wherein the second port
conveys a second string of the at least some converted
commands in a second order to the physical media, and
30 wherein the physical media is adapted to receive the
first string and to store and recall the data in response

to the first order, and to receive the second string and to store and recall the data in response to the second order.

4. The storage system according to claim 1, wherein the
5 command comprises a request according to a small computer system interface (SCSI) protocol, and wherein the storage system is operative according to the SCSI protocol.

5. The storage system according to claim 1, wherein
10 each of the ports comprises a respective central processing unit (CPU) which operates each of the ports substantially independently.

6. The storage system according to claim 1, wherein the
command is comprised in one of one or more strings of commands, each command of each string being directed via
15 one of the ports to a respective one of the LUs, and comprising a coupling which:

receives the commands comprised in the one or more strings,

sorts the commands according to the ports via which
20 the commands are directed, and

conveys the commands to the ports to which the commands are directed.

7. The storage system according to claim 1, wherein the
received command comprises a write command to store a
25 data string from a host to the physical media, and wherein the one or more converted commands comprise instructions to the host to convey the data string to the physical media via the port, and wherein the port is adapted to convey the instructions to the host.

8. The storage system according to claim 1, wherein the received command comprises a read command from a host to read a data string from the physical media, and wherein the one or more converted commands comprise instructions
5 to convey the data string via the port to the host.

9. The storage system according to claim 1, wherein the physical media comprise the data, and wherein the port is adapted to track changes of location of the data within the physical media.

10 10. A method for processing data, comprising:
storing and recalling data in one or more data storage logical units (LUs), comprising respective physical media, responsively to commands; and
configuring in each of a plurality of ports a
15 respective LU command queue for each of the LUs, such that upon receiving a command directed to one of the LUs, the port places the received command in the respective LU command queue, converts the received command to one or more converted commands at least some of which are
20 directed to the physical media of the one of the LUs, and conveys the at least some converted commands to the physical media in an order determined by the respective LU command queue.

11. The method according to claim 10, wherein the
25 command is comprised in one of a plurality of strings of commands each directed to a respective one of the ports, and comprising coupling each of the ports to receive the respective string of commands directed thereto.

12. The method according to claim 10, wherein the
30 plurality of ports comprises a first port and a second port, the method further comprising:

conveying from the first port a first string of the at least some converted commands in a first order to the physical media;

conveying from the second port a second string of the at least some converted commands in a second order to the physical media;

and wherein storing and recalling the data comprises, at the physical media:

receiving the first string and storing and recalling the data in response to the first order; and

receiving the second string and storing and recalling the data in response to the second order.

13. The method according to claim 10, wherein the command comprises a request according to a small computer system interface (SCSI) protocol, and wherein the plurality of ports are comprised in a storage system operative according to the SCSI protocol.

14. The method according to claim 10, wherein each of the plurality of ports operates substantially independently of other ports comprised in the plurality.

15. The method according to claim 10, wherein the command is comprised in one of one or more strings of commands, each command of each string being directed via one of the ports to a respective one of the LUs, and comprising:

receiving the commands comprised in the one or more strings;

sorting the commands according to the ports via which the commands are directed; and

conveying the commands to the ports to which the commands are directed.

16. The method according to claim 10, wherein the received command comprises a write command to store a data string from a host to the physical media, and wherein the one or more converted commands comprise
5 instructions to the host to convey the data string to the physical media via the port, and wherein the port is adapted to convey the instructions to the host.

17. The method according to claim 10, wherein the received command comprises a read command from a host to
10 read a data string from the physical media, and wherein the one or more converted commands comprise instructions to convey the data string via the port to the host.

18. The method according to claim 10, wherein the physical media comprise the data, and comprising tracking
15 at the port changes of location of the data within the physical media.